

C-A MAINTENANCE, MODIFICATIONS, AND REPAIRS SCHEDULE

R. Zaharatos – May 2, 2001

SCHEDULE SUMMARY

Maintenance Begins:	May 7, 2001, 0500hrs
Maintenance Ends For AGS/Booster:	May 18, 2001, 1200hrs
RHIC - secure for beam:	May 22, 2001, 0800hrs

Machine Areas Access:	Booster	Restricted Access - May 14, 0800hrs to May 17, 1200hrs
	AGS	Restricted Access - May 14, 0800hrs to May 18, 1200hrs
	SEB	Restricted Access - May 10, 0800hrs. to May 18, 1200hrs
	ATR/U Line	Restricted Access - May 8, 0800hrs to May 18, 1200hrs
	Linac	Restricted Access
	RHIC	Restricted Access - Present to May 22, 0800hrs(except May 8,9 for Pass roll-ups)

Scheduled Power Outages

<u>Outage Period</u>	<u>Areas/Equipment Affected</u>	<u>Jobs Description</u>
May 7-9 May 7, 0500-1700	Booster Main Magnet P.S. Booster feeder(Sw. to alt.)	Booster transformers PM's LIPA feeder switchgear repair
May 7-11	Bldg. 928 & 929, RF and Siemen's Cyclo Converter	RF and Siemen's Cyclo Conv.- reconfig. UPS power
May 12(Sat.)	Bldg. 911 old section	Substation 911A and 911N Maint. and Replacement of
May 14	Fan Hse. A and A10 Hse. Bldg. 912 lights and utility pwr.	Transfer last of C loads
May 19(Sat.)	Bldg. 921 plus(see published list)	Shutdown Sub's F, G, & H to repair G jumper and PM's
May 20(Sun.)	Bldg. 921 plus(see published list)	Shutdown Sub's P's and K's P-PM's, K- repair jumper

Access Controls Recertification Schedule

1. Booster, AGS, and Switchyard(2days each area, transparent to shutdown jobs)
2. RHIC pass roll-ups - requires 2 days with all of the RHIC tunnel areas secured with no access. (May 8 and 9, 2001)

C-A POWERED TESTING REQUESTS

1. Siemen's testing into AGS Ring.
2. Booster - ramping for DH1 P.S. in LTB
3. RHIC RF - testing and final set-up

PRIMARY JOBS

JOBS STATUS CODE: **C** complete **IP** in-process **RS** reschedule **CAN** cancelled

AGS RING EQUIPMENT

1. Remove and repair F20 Wall Monitor.
2. G10 Kicker - repair PFN interlock
3. Vacuum - Leak check IJ for possible RF problem

AGS EXTERNAL EQUIPMENT

1. Install Siemens M-G Set and run and test.
2. Tower 2 - replace fan gear box
3. Tower 7 - replace fan gear box
4. Install cooling lines on Buss for Siemens/West. Hse. switch

ATR

1. Tower 6 - maintenance and cleaning

BAF

1. BAF earth shielding and tunnel work(requires Booster beam lock-out)

BOOSTER EXTERANAL EQUIPMENT

1. Main Dipole power feeder repairs and maint..

SEB

1. SEM water sys. - drain modified section for new chiller piping hook-up

RHIC

1. Complete installation of Roman Pots and test.
2. BPM's - Complete new installations including polarimeter and Roman Pots.
3. Polarimeters sector 12 - Complete installation and test all electronics
4. Prepare UPS's at 1004B, 1012, and 1010
5. Testing and final set-up for RF capture and store systems

SHUTDOWN SCHEDULE

<u>7 May</u>	0400	Beam off. Shutdown period begins Secure and LOTO Booster Main Dipole P.S. for scheduled power switchover at 0500. All Booster equipment to off followed by all other equipment. Begin Restricted Access LOTO for the Booster and AGS Rings Booster and AGS remain on Controlled Access for additional cooldown. Open padlocks for B Fan Hse.
	0500	Booster switchover to back-up feeder for LIPA work.
	0600	Shutdown jobs coordination begins by Maintenance Coordinators (Detailed schedule will be available on Friday, May 11, 2001

C-A DEPARTMENT MAINTENANCE, REPAIR AND MODIFICATION PROGRAM
JOBS SCHEDULING REQUEST

GROUP: Accelerator Controls – B. Venegas (ext. 3917, BP 7241), W. Buxton (ext. 4053)

<u>JOB#</u>	<u>ACCESS TO</u>	<u>EST. HRS.</u>	<u>JOB DESCRIPTION AND RESPONSIBLE PERSON</u>	<u>ADD’L. SUPPORT</u>	<u>HP SURVEY</u>
1	928, 930A, 930UEB, 930LEBT	4 hrs.	Install new Motorola CPU’s in VME stations (Warren Jappe)	None	None
2	930A, 930UEB, AD Station, A- Trailer, C- Trailer, J18, TALCO, U-Line	12 hrs.	Upgrade PLD’s in V113 MADC controller modules. (Al Watson)	None	None
3	A10	20 min.	Install two digital I/O boards for mode switching	None	None
4	930UEB	20 min.	Check out digital I/O board in 930UEB VME station.	None	None
5	911B	24 hrs.	Work on central mux problems.	None	None

C-A DEPARTMENT MAINTENANCE, REPAIR AND MODIFICATION PROGRAM
JOBS SCHEDULING REQUEST

GROUP: Beam Components & Instrumentation: D. Lehn (Ext. 4095 [4276], T. Russo (Ext. 7330 [4201])

<u>JOB#</u>	<u>ACCESS TO</u>	<u>EST. HRS.</u>	<u>JOB DESCRIPTION AND RESPONSIBLE PERSON</u>	<u>ADD'L. SUPPORT</u>	<u>HP SURVEY</u>
1	RHIC	16 hrs.	Crystal Collimator - Sector 7 a) Completion of AC Reset System		
2	RHIC	8 hrs.	Beam Scrapers - Sector 7 & Sector 8 a) Completion of Video Setup		
3	RHIC	40 hrs.	Polarimeters - Sector 12 a) Installation and test of all necessary electronics b) Complete grounding of devices	Spin Group	
4	RHIC	120 hrs.	Beam Loss Monitor System a) Sector 12 – Install 2 loss monitors for new polarimeter. b) Sector 1 & 2 – Setup and install loss monitors for the Roman Pots and IPM. c) All Sectors - Full checkout of system		
5	RHIC	240 hrs.	Roman Pots (pp2pp) Sectors 1 & 2 a) Install, terminate and test all necessary cabling. b) Complete construction and test of all 4 devices. c) Setup and test of all controls in 1002D.	Pp2pp Group	
6	AGS Ring	4 hrs.	A20 Transformer a) install new capacitor ring.	HP Survey	
7	AGS Ring	2 hrs.	A20 Flying Wire a) Setup new PMT	HP Survey	
8	AGS	1 hr.	IPM's a) Pump out gas lines		
9	AGS Ring	1 hr.	F5/F10 – Check water flow on Septums	HP Survey	
10	C-Line	40 hrs.	LESB 3 Separator a) Test Separator and all associated equipment. b) Condition Separator as necessary.	HP Survey, Riggers, EAG	
11	C-Line	120 hrs.	LESB 2 Separator a) Change all necessary instrumentation. b) Replace all rad damaged cabling. c) Test Separator and all associated equipment. d) Reassemble power supply platform. e) Condition Separator as necessary.	HP Survey, Riggers, EAG	
12	D-Line	TBD	2 GEV Separator a) Test all instrumentation, repair/replace as necessary. b) Test Separator and all associated equipment. c) Condition Separator as necessary.	HP Survey	
13	AGS Ring	2 hrs.	CF100 a) Investigate/Repair Video	HP Survey	
14	ATR	8 hrs.	Video a) UF1/H10 - Setup fiber link 911-1000p		

15	RHIC	TBD	Local Polarimeter (Calorimeter/Hodoscope) a) Setup cables etc. prior to ring closure	Spin Group
16	Booster	1 hr.	RLRM a) Investigate Argon Gas Leak	HP Survey, Pump Room
17	RHIC	4 hrs.	DCCT a) Rezero and setup electronics	
18	C-A	TBD	Instrumentation a) Setup and adjust as necessary all gains etc. for Gold.	

C-A DEPARTMENT MAINTENANCE, REPAIR AND MODIFICATION PROGRAM
JOBS SCHEDULING REQUEST

GROUP: High Frequency Instrumentation – P. Cerniglia (ext. 4415, BP 7144) P. Cameron
(ext. 7657, BP 7145)

<u>JOB#</u>	<u>ACCESS TO</u>	<u>EST. HRS.</u>	<u>JOB DESCRIPTION AND RESPONSIBLE PERSON</u>	<u>ADD’L. SUPPORT</u>	<u>HP SURVEY</u>
1	RHIC Ring-3C	4 hrs.	BPM System – Install UPS’s – P. Cerniglia	None	None
2	RHIC Ring- 11C	4 hrs.	BPM System – R&R bad IFE modules – P. Cerniglia	None	None
3	RHIC Ring- IP8	2 hrs.	BPM System – Connect DX BPM’s – P. Cerniglia	None	None
4	RHIC Ring- Sectors 1&2	8 hrs.	IPM System – Test cables – R. Connolly	None	None

C-A DEPARTMENT MAINTENANCE, REPAIR AND MODIFICATION PROGRAM
JOBS SCHEDULING REQUEST

GROUP: LINAC – B. Briscoe (ext. 5007, 5010, BP 4225) J. Alessi (ext. 7563)

<u>JOB#</u>	<u>ACCESS TO</u>	<u>EST. HRS.</u>	<u>JOB DESCRIPTION AND RESPONSIBLE PERSON</u>	<u>ADD'L. SUPPORT</u>	<u>HP SURVEY</u>
1	Linac	40 hrs.	Change Ion Pumps in tank 6 6-1, 6-6	Vac.	SS00002S
2	Linac	40 hrs.	Change Ion Pump in tank 1 1-4	Vac.	SS00002S
3	None	80 hrs.	Remove Mod 4 7835 PS for repair	None	None
4	None	40 hrs.	Repair Dynapower PS	None	None
5	None	40 hrs.	Test and Install new AGC Amp in RFQ LLRF	None	None
6	Linac	40 hrs.	Install multiwire in HEBT for Pol.	Vac.	SS00002S
7	None	80 hrs.	Improve RFQ fast phase loop response	None	None
8	None	40 hrs.	Calibrate RF Amp & Phase System	None	None
9	None	80 hrs.	Put Tank Ion Pumps on Control System	None	None
10	None	40 hrs.	Install controls for resetting Ion Pumps	None	None
11	None	40 hrs.	Complete installation of new SS Chopper	None	None
12	None	120 hrs.	Add new Malf Bucket to BLIP & Rewire	None	None
13	None	2 hrs.	Set Mod 8 7835 Input Tuning Limits	None	None
14	None	40 hrs.	Repair BLIP 1 st multiwire	Vac	SS00002S
15	None	200 hrs.	Modify 7835 Input Turner with Fermi Design	None	None
16	None	80 hrs.	Complete construction of SS Modulators	None	None
17	None	80 hrs.	Install ACME supply for HEBT 2 Quad	None	None
18	None	120 hrs.	Add water cooling to 7835 supplies	None	None
19	None	80 hrs.	Add flow switch interlock to 7835 water	None	None
20	None	80 hrs.	Make new LEBT Solenoid	None	None
21	None	40 hrs.	Prototype and Test new solenoid pulser PS	None	None
22	None	8 hrs.	Install flow switches on Pol BMS	None	None
23	None	2 hrs.	Change DH5 Datacon Card Readback	Controls	None
24	Linac	4 hrs.	Repair Argon Leak in BLIP	HP	SS00002S
25	Linac	4 hrs.	Repair cable on BLIP horz. Multiwire.	HP	SS00002S
26	None	80 hrs.	Rewire AC overloads on 50 KV Supplies	None	None
27	None	40 hrs.	Add cables to BLIP readback chassis	None	None
28	None	80 hrs.	Check all driver & cap bank door AC Filters	None	None

29	None	2 hrs.	Check Mod 8 Driver Crowbar Ckts.	None	None
30	None	2 hrs.	Check Mod 8 AC Strip in LCS A14	None	None
31	Linac	80 hrs.	Flow check tanks 2,6,7 & check measure flows	Water	SS00002S
32	None	20 hrs.	Replace mixing valves on Tanks 2 & 6	Water	SS00002S
33	None	8 hrs.	Check Tank 9 Water Pump (Repaired)	Water	None
34	None	20 hrs.	Replace Nitrogen Dewar	Cryo	None
35	None	16 hrs.	Put in Flow Meter on Nitrogen Line	Water	None
36	None	8 hrs.	Check operation of backup RF Pump	Water	None
37	None	80 hrs.	Replace Motor Control Station for RF Pump	Elect.	None
38	Linac	20 hrs.	Check pulsing of DH-1 for Polarized	P.S.	SS00002S
39	None	24 hrs.	Put brackets on all driver carts for circ.	None	None
40	None	80 hrs.	Install circulator into RFQ-1	None	None
41	Linac	40 hrs.	Put needle valves in feed loops	None	SS00002S
42	None	8 hrs.	Swap Mod 1 & 7 7835S with spares	None	None
43	None	4 hrs.	Put Redi Panel in LEBT Vac Rack	None	None
44	Linac	4 hrs.	Check HEBT Vac valves Air Lines	Vac	SS00002S
45	None	4 hrs.	Rewire Linac Time Line Fan Out	None	None
46	None	8 hrs.	Check Fil and Grid current in Mod 8 Mod	Vac	None
47	Linac	40 hrs.	Add multi wire to in front of polarimeter	Vac	SS00002S
48	Linac	200 hrs.	Add 2 Quads in HEBT for polarimeter and PS	Vac.	SS00002S
49	None	8 hrs.	Repair Mod 4 Driver Anode Meter	None	None

C-A DEPARTMENT MAINTENANCE, REPAIR AND MODIFICATION PROGRAM
JOBS SCHEDULING REQUEST

GROUP: MAIN RING POWER SUPPLY SYSTEMS: M. Bannon (Ext. 7704) [4224], I. Marneris
(Ext. 7027) [4255]

<u>JOB#</u>	<u>ACCESS TO</u>	<u>EST. HRS.</u>	<u>JOB DESCRIPTION AND RESPONSIBLE PERSON</u>	<u>ADD'L. SUPPORT</u>	<u>HP SURVEY</u>
1			Install Siemens M-G Set. And run & test into AGS Ring.	WCS01-04-02	
2			Install DC bus on rect. Buswork for new Siemens-Westinghouse running conditions.	WCS01-04-08	
3			Swap AC Feed to 52G Siemens CB form Westinghouse M-G Set to Siemens M-G Set.	WCS01-04-02	
4			Do PCB inventory on caps @ Siemens	WCS01-04-05	
5			Replace SCR in PS DH2 and 3 in the BTA Line (phase c+ left bank looking from front of ps).	WCS01-04-09	
6			Prepare UPS's in RHIC at 1004B, 1012, 1010 10 kva Mitsubishi units.	WCS01-04-07	
7			Booster Gauss clock add a 5v 6 amp power supply to the gauss clock	WCS01-04-10	
8			E10 UPS fan possible replacement	WCS01-04-11	
9			Vert. Quad in multipole room check PLC connectors.	WCS01-04-12	
10			Oil pit alarm to communicator in Pump Room to MCR	WCS01-03-02	
11			Try to ramp PS DH1 in LTB Line	WCS01-03-01	
12			Reattach the Active Filter Output cables to the Active Filter Inductor and R&T Power Supply on real load.	WCS01-04-13	
13			Reattach RF loads to the 929 RF UPS's and hook up the 928 UPS to the Cycloconverter rack (208 vac 3 ph)	WCS01-04-15&16	

C-A DEPARTMENT MAINTENANCE, REPAIR AND MODIFICATION PROGRAM
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GROUP: Maintenance Support: R. Zaharatos (Ext. 7205 [4281], J. Benante (Ext. 4498(1207),

<u>JOB#</u>	<u>ACCESS TO</u>	<u>EST. HRS.</u>	<u>JOB DESCRIPTION AND RESPONSIBLE PERSON</u>	<u>ADD'L. SUPPORT</u>	<u>HP SURVEY</u>
1	RHIC	40 hrs.	Paint tunnel floor in 3, 9, and 10 o'clock	Painters	
2	RHIC	40 hrs.	PM's on AC Units throughout	AC Shop	
3	RHIC	20 hrs.	Relamp Support Buildings	Electricians	
4	RHIC	20 hrs.	Install signs for Roof Access.	Carpenters	
5	913 Fan Houses	6 days	Fan Houses, A-E Air Condition maintenance and turn-on	HP Survey Filters	
6	913 Fan Houses		Install Sump Alarms	CAS Group	
7	Booster Tunnel	6 days	Grout damaged floor areas	P.E.	RWP
8	N/A		Update Booster device list		
9	N/A		Update AGS device list		

C-A DEPARTMENT MAINTENANCE, REPAIR AND MODIFICATION PROGRAM
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GROUP: POWER DISTRIBUTION: D. Bastedo (Ext. 2555) [0274], T. Nehring (Ext. 5275) [4246]

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1	G Substation	4 Days	Work includes the repair of the jumper cable. Affected areas include: EEA, EEBA, NEBA, A,B,C,D,U,V Lines, G-2, B-975, B-919B		
2	2K Substation	4 Days	Work includes the repair of the jumper cable. Affected areas include: EEA, EEBA, Target Bldg., A,B,D Lines, G-2, B-940, B-921		
3	C Substation	8 Days	Re-feed old C loads to New C Substation. Affected areas include: A Fan House, Target Building Lighting, A,C,D Line		
4	631 Substation	72 Days	Repair oil circuit breaker feeding the booster main transformer.		
5	Switchgear in Westinghouse Room	4 Days	Remove circuit breakers for A & 911N substations. Affected areas include: high field magnets, B-911 services, B-911 old area.		
6	Repair loop feed	120 Days	Remove old section of cable and install new section in loop between E and 3F substations. Affected areas include: EEA, EEBA, NEBA, A,B,C,D,U,V Lines, G-2		

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GROUP: PULSED POWER: R. Zapasek (Ext. 2189) [4263], A. Zhang (Ext. 5369) [7248]

<u>JOB#</u>	<u>ACCESS TO</u>	<u>EST. HRS.</u>	<u>JOB DESCRIPTION AND RESPONSIBLE PERSON</u>	<u>ADD'L. SUPPORT</u>	<u>HP SURVEY</u>
1	AGS	8 hrs.	G10 Kicker, Repair Interlock on PFN	HP Survey	
2	Booster	4 hrs.	F3 Kicker, Check and Replace resistors in PFN	HP Survey	
3	914	2 hrs.	Booster Tune Meter, Repair Interlock	HP Survey	

C-A DEPARTMENT MAINTENANCE, REPAIR AND MODIFICATION PROGRAM
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GROUP: RF: N. Laloudakis (Ext. 7177 [4261], M. Brennan (Ext. 3755)

<u>JOB#</u>	<u>ACCESS TO</u>	<u>EST. HRS.</u>	<u>JOB DESCRIPTION AND RESPONSIBLE PERSON</u>	<u>ADD'L. SUPPORT</u>	<u>HP SURVEY</u>
1	RHIC Section 4		Testing and final set-up for capture and store RF Systems.		
2	AGS 929		Turn-On Testing of AGS RF		
3	Booster 914		Turn-On Testing of Booster RF		

C-A DEPARTMENT MAINTENANCE, REPAIR AND MODIFICATION PROGRAM
JOBS SCHEDULING REQUEST

GROUP: Vacuum - S. Gill (Ext. 4627) [4164], M. Mapes (Ext. 2841)[4277]

<u>JOB#</u>	<u>ACCESS TO</u>	<u>EST. HRS.</u>	<u>JOB DESCRIPTION AND RESPONSIBLE PERSON</u>	<u>ADD'L. SUPPORT</u>	<u>HP SURVEY</u>
1	AGS (I-J)	2-4 hrs.	RF Group having problems – possible vent/leak check	RF	
2	AGS (J-K)	2-4 hrs.	Leak Check – possible replace Ion Pump Power Supplies		
3	Atr Line	4-5 hrs.	Vent – Replace Ion Pump WIP2 – Pump Down – Leak Check		
4	Booster	1	REMOVE RGA BOXES IN BTA & F SECTORS		
5	RHIC		Vent 12:00 polarimeter Blue/Pumpdown May 2 or 3		

C-A DEPARTMENT MAINTENANCE, REPAIR AND MODIFICATION PROGRAM
JOBS SCHEDULING REQUEST

GROUP: Water Systems: J. deBoer (Ext. 4668 [4250], R. Grandinetti (Ext. 7186 [4239]

<u>JOB#</u>	<u>ACCESS TO</u>	<u>EST. HRS.</u>	<u>JOB DESCRIPTION AND RESPONSIBLE PERSON</u>	<u>ADD'L. SUPPORT</u>	<u>HP SURVEY</u>
1	Tower No. 6 Bldg. 1000P	8 hrs.	Perform maintenance, cleaning and repairs on cooling tower	None	None
2	Tower No. 2 Bldg. 912	48 hrs.	Replace broken fan gear box with new. (Possible outside contractors for repair)	Riggers, Safety	None
3	Tower No.7 Bldg. 1005P	48 hrs.	Replace broken fan gear box with new. (Possible outside contractors for repair)	Riggers, Safety	None
4	RFMG Bldg. 928	2 hrs.	Install new load for the RFMG PLC's RF Cavity, RF Power and SEM will be affected.	RF Group, P.E. A/C, Siemens Group	None
5	Westinghouse Bldg. 911A	4 hrs.	Repair leak on Westinghouse Heat Exchanger	Siemens Group	None
6	Linac Bldg. 930	48 hrs.	Install new cavity system bag filters and temp regulator on one station. Note: if cavity station is available for this upgrade.	Linac Group	None
7	C-A Complex	24 hrs.	Cooling Towers draining and cleaning Note: Towers to be cleaned will be determined by availability of towers.	CAS Support Group	None
C 8	STAR Bldg. 1006	24 hrs.	Drain portion of modified chill water system for chiller piping hook-up.	STAR Group, P.E. Plumbers	None
9	SEM Bldg. 912	24 hrs.	Drain portion of the SEM system in 912 for installation of shut off valves and piping.	CAS Support Group, outside Contractors	None
10	Booster Bldg. 914	24 hrs.	Drain portion of tower cooling system in pump room to repair a vitaulic coupling leak. Note: If man power and time is available.	P.E. Plumbers	Sample required, water group RWP.
11	Towers 2 & 3 Bldg. 912	32 hrs.	Reconfigure piping for make – up on cooling towers. Note: If man power and time is available.	P.E. Plumbers	None
12	Tower 5, Bldg. 919A	16 hrs.	Repair backflow preventer on domestic water Line	P.E. Plumbers	None
13	Tower 5, Bldg. 919A	8 hrs.	Repair pin hole on tower piping in Pump Room.	P.E. Welders	None
14	Tower 5, Bldg. 919A	24 hrs.	Install domestic water damper on tower make-up.	P.E. Plumbers	None

15	RFMG Bldg. 929	8 hrs.	Install cooling lines on Buss for Siemens/Westinghouse switch.	Power Room Group	None
16	RFMG Bldg. 929	8 hrs.	Assist in the Alignment of Siemens Rotor.	Power Room Group	None